

REMARKS

Claims 47-49 and 51-53 and 60-61 are pending. Claims 54-59 have been cancelled as drawn to a non-elected species. Claims 48-49 have been amended. Support for the amended claims is found in the claims as originally filed. New claims 60-61 have added. Support for the new claims is found at page 38, lines 13-19 of the specification.

Rejection under 35 U.S.C. § 102(b)

Claims 47-53 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Meade et al. (WO/95/15971) (Meade).

Meade discloses methods for the site specific addition of electron transfer moieties to nucleic acids, including nucleic acid analogs, in a variety of positions (*see e.g.*, page 20, lines 18-20; Fig. 4A; page 20, lines 30-34; page 21, line 1; page 24, line 16; page 22, lines 7-9; page 24, line 18; and page 22, lines 17-20). In addition to the attachment of transition metals to conventional sugar-phosphate backbones, the reference discloses that transition metals can be added to nitrogen or sulfur atoms as part of nucleotide dimers that are linked by peptide bonds (*see e.g.*, page 32, lines 30-32).

The present claims are directed to the modification of peptide nucleic acids in which a chemical substituent is covalently attached to an α -carbon (*see e.g.*, Figs. 31A and 31B) or base of a monomeric subunit. As distinguished from the linkages disclosed in Meade, the linkages of the present invention are characterized by the attachment of a chemical substituent to a specific α -carbon or base within a monomeric subunit of a peptide nucleic acid.

An anticipation rejection requires that a single reference expressly or inherently disclose each and every element of a claim. In re Paulsen, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994); MPEP § 2131 (citing Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)).

As discussed above, Meade does not disclose linkages between chemical substituents and α -carbons or bases within monomeric subunits of peptide nucleic acids. Applicants accordingly respectfully request that the 35 U.S.C. §102(b) rejection of claims 47-53 be withdrawn.

Rejections Under 35 U.S.C. § 102(e)

Claims 47-53 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Megerle et al., U.S. Patent No. 5,874,046 (hereinafter "Megerle").

Megerle discloses the same techniques taught in Meade. Column 1, lines 56-65 and Column 4, lines 47-61.

The present invention is summarized above.

The arguments set forth above for the Meade reference apply equally to Megerle. Like Meade, Megerle does not disclose linkages between chemical substituents and α -carbon or base positions within the monomeric subunits of peptide nucleic acids. Applicants accordingly respectfully request that the 35 U.S.C. § 102(e) rejection of claims 47-53 be withdrawn.

CONCLUSIONS

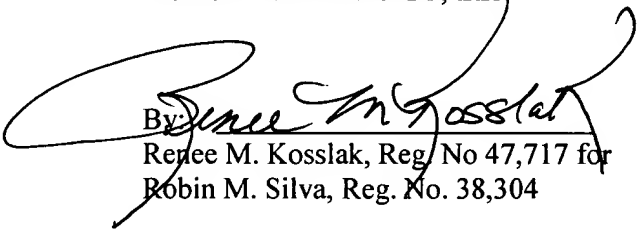
The Examiner is invited to contact the undersigned at (415) 781-1989 for discussion of any outstanding issues.

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Respectfully submitted,

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